

IN THE CLAIMS

1. (cancelled)

2. (previously presented) A radio communication apparatus operating as a control station of a given one of a plurality of wireless networks that co-exist, at least in part, in a common radio communication environment, the radio communication apparatus comprising:

beacon transmitting means for setting a transmission frame period of the given wireless network and for transmitting, at a predetermined time within the transmission frame period, beacon information of the given wireless network regarding resource allocation thereof;

interference detecting means for detecting whether the given wireless network interferes with another one of the plurality of wireless networks; and

buffer frame period setting means for setting, upon detection of interference between the given wireless network and the another wireless network, a buffer frame period that is of different length than the transmission frame period to change the timing of the transmission frame period,

wherein the interference detecting means detects interference of the beacon information of the given wireless network based on parameters obtained by receiving further beacon information from the another wireless network.

3. (cancelled)

4. (previously presented) The radio communication apparatus according to Claim 2, wherein the transmission frame period includes one or more contention free periods wherein data communication is effected based on at least one of reservation, allocation, or reservation and allocation, the interference detecting means detecting whether the one or more contention

free periods are synchronized between the given wireless network and the another wireless network based on the parameters obtained by the receiving of the further beacon information.

5. (previously presented) The radio communication apparatus according to Claim 4, wherein the buffer frame period setting means sets a buffer frame period that is shorter than the transmission frame period to ease the interference between the one or more contention free periods of the given wireless network and the another wireless network.

6. (previously presented) The radio communication apparatus according to Claim 2, wherein the interference detecting means detects interference between the given wireless network and the another wireless network based on information received from a further radio communication apparatus in the given wireless network.

7. (previously presented) The radio communication apparatus according to Claim 2, wherein the buffer frame period setting means sets a buffer frame period that is shorter than the transmission frame period to ease collision between transmission positions of beacon information of the given wireless network and the further beacon information of the another wireless network.

8. (previously presented) A radio communication method for a control station of a given one of a plurality of wireless networks that co-exist, at least in part, in a common radio communication environment, the method comprising:

a beacon transmission step for setting a transmission frame period of the given wireless network and for transmitting, at a predetermined time within the transmission frame period, beacon information of the given wireless network regarding resource allocation thereof;

an interference detection step for detecting whether the given wireless network interferes with another one of the plurality of wireless networks; and

a buffer frame period setting step for setting, upon detection of interference between the given wireless network and the another wireless network, a buffer frame period that is of different length than the transmission frame period to change a timing of the transmission frame period,

wherein the interference detection step detects interference of the beacon information of the given wireless network based on parameters obtained by receiving further beacon information from the another wireless network.

9. (cancelled)

10. (previously presented) The radio communication method according to Claim 8, wherein the transmission frame period includes a contention free period wherein data communication is effected based on at least one of reservation, allocation, or reservation and allocation, and the interference detection step detects whether the one or more contention free periods are synchronized between the given wireless network and the another wireless network based on parameters obtained by receiving the further beacon information.

11. (previously presented) The radio communication method according to Claim 10, wherein the buffer frame period setting step sets a buffer frame period that is shorter than the transmission frame period to ease the interference between the one or more contention free periods of the given wireless network and the another wireless network.

12. (previously presented) The radio communication method according to Claim 8, wherein the interference detection step detects interference between the given wireless network and

the another wireless network based on information received from a further radio communication apparatus in the given wireless network.

13. (previously presented) The radio communication method according to Claim 12, wherein the buffer frame period setting step sets a buffer frame period that is shorter than the transmission frame period to ease collision between transmission positions of the beacon information of the given wireless network and further beacon information of the another wireless network.

14. (currently amended) A radio communication apparatus operating in at least one of a plurality of wireless networks that co-exist, at least in part, in a common radio communication environment, the radio communication apparatus comprising:

beacon information receiving means for receiving first beacon information from a first control station of a first one of the plurality of wireless networks located in a predetermined beacon information receiving range;

beacon information detecting means for detecting second beacon information from a second control station of a second one of the plurality of wireless networks;

collision detecting means for detecting whether the first beacon information collides with the second beacon information; and

interference informing means for notifying the first control station of the first network of a beacon information collision detection result,

wherein the beacon information detecting means sets a predetermined time in the beacon information receiving range to detect the second beacon information received from the second control station of the second network.

15. (cancelled)

16. (currently amended) A radio communication apparatus operating in at least one of a plurality of wireless networks that co-exist, at least in part, in a common radio communication environment according to Claim 14, the radio communication apparatus comprising:

beacon information receiving means for receiving first beacon information from a first control station of a first one of the plurality of wireless networks located in a predetermined beacon information receiving range;

beacon information detecting means for detecting second beacon information from a second control station of a second one of the plurality of wireless networks;

collision detecting means for detecting whether the first beacon information collides with the second beacon information; and

interference informing means for notifying the first control station of the first network of a beacon information collision detection result,

wherein the interference informing means notifies the first control station of the first network of the beacon information collision detection result using a management time slot allocated to the first control station of the first network.

17. (currently amended) A radio communication method carried out in a radio communication apparatus operating in at least one of a plurality of wireless networks that co-exist, at least in part, in a common radio communication environment, the method comprising:

a beacon information receiving step for receiving first beacon information from a first control station of a first one of the plurality of wireless networks located in a predetermined beacon information receiving range;

a beacon information detection step for detecting second beacon information from a second control station of a second one of the plurality of wireless networks;

a collision detection step for detecting whether the first beacon information collides with the second beacon information; and

an interference informing step for notifying the first control station of the first network of a beacon information collision detection result,

wherein the beacon information detection step sets a predetermined time in the beacon information receiving range to detect the second beacon information received from the second control station of the second network.

18. (cancelled)

19. (currently amended) A radio communication method carried out in a radio communication apparatus operating in at least one of a plurality of wireless networks that co-exist, at least in part, in a common radio communication environment ~~according to Claim 17, the method comprising:~~

a beacon information receiving step for receiving first beacon information from a first control station of a first one of the plurality of wireless networks located in a predetermined beacon information receiving range;

a beacon information detection step for detecting second beacon information from a second control station of a second one of the plurality of wireless networks;

a collision detection step for detecting whether the first beacon information collides with the second beacon information; and

an interference informing step for notifying the first control station of the first network of a beacon information collision detection result,

wherein the interference informing step notifies the first control station of the first network of the beacon information collision detection result using a management time slot allocated to the first control station of the first network.

20. (previously presented) A computer readable medium storing a computer program having instructions for carrying out a radio communication method in control station of a given one of a plurality of wireless networks that co-exist, at least in part, in a common radio communication environment, the method comprising:

setting a transmission frame period of the given wireless network and transmitting, at a predetermined time within the transmission frame period, beacon information of the given wireless network regarding resource allocation thereof;

detecting whether the given wireless network interferes with another one of the plurality of wireless networks; and

setting, upon detection of interference between the given wireless network and the another wireless network, a buffer frame period that is of different length than the transmission frame period to change a timing of the transmission frame period,

wherein the detecting step detects interference of the beacon information of the given wireless network based on parameters obtained by receiving further beacon information from the another wireless network.

21. (currently amended) A computer readable medium storing a computer program having instructions for carrying out a radio communication method in a radio communication apparatus operating in at least one of a plurality of wireless networks

that co-exist, at least in part, in a common radio communication environment, the method comprising:

receiving first beacon information from a first control station of a first one of the plurality of wireless networks located in a predetermined beacon information receiving range;

detecting second beacon information from a second control station of a second one of the plurality of wireless networks;

detecting whether the first beacon information collides with the second beacon information; and

notifying the first control station of the first network of a beacon information collision detection result,

wherein the beacon information detection step sets a predetermined time in the beacon information receiving range to detect the second beacon information received from the second control station of the second network.

22. (previously presented) A radio communication system, comprising:

a plurality of wireless networks, each one of the plurality of wireless networks including an associated plurality of radio communication apparatuses and an associated control station, the associated control station being operable to allocate a resource to each associated radio communication apparatus of that wireless network in an associated transmission frame period and to transmit a beacon signal at a predetermined timing within the associated transmission frame period,

wherein upon detection of interference between at least two of the plurality of wireless networks, a buffer frame period having a different length than the associated transmission frame period is set temporarily in one of the at least two wireless networks to prevent a collision

between a first beacon signal transmitted by a first control station associated with the one of the at least two wireless networks and a second beacon signal transmitted by a second control station associated with another of the at least two wireless networks, the buffer frame period adjusting a length of an interval between the first beacon signal and the second beacon signal.

23. (previously presented) A radio communication system, comprising:

a plurality of wireless networks, each one the plurality of wireless networks including an associated plurality of radio communication apparatuses and an associated control station, the associated control station being operable to allocate a resource to each associated radio communication apparatus of that wireless network in an associated transmission frame period, the associated transmission frame period including a non-competitive transmission field;

wherein upon detection of interference between at least two of the plurality of wireless networks, a buffer frame period having a different length than the associated transmission frame period is set temporarily in one of the at least two wireless networks to prevent competition between a first non-competitive transmission field of a first transmission frame period associated with the one of the at least two wireless networks and a second non-competitive transmission field of a second transmission frame period associated with another of the at least two wireless networks, the buffer frame period adjusting a positional relationship between a timing of the first transmission frame period and a timing of the second transmission frame period.

24. (new) A computer readable medium storing a computer program having instructions for carrying out a radio communication method in a radio communication apparatus operating in at least one of a plurality of wireless networks that co-exist, at least in part, in a common radio communication environment, the method comprising:

a beacon information receiving step for receiving first beacon information from a first control station of a first one of the plurality of wireless networks located in a predetermined beacon information receiving range;

a beacon information detection step for detecting second beacon information from a second control station of a second one of the plurality of wireless networks;

a collision detection step for detecting whether the first beacon information collides with the second beacon information; and

an interference informing step for notifying the first control station of the first network of a beacon information collision detection result,

wherein the interference informing step notifies the first control station of the first network of the beacon information collision detection result using a management time slot allocated to the first control station of the first network.